WHAT IS CLAIMED IS:

1. A method, comprising:

obtaining two images of similar image information from two uncalibrated sources;

superimposing lines formed on said images to rectify the two images relative to one another to form rectified images; and

using said rectified images to form three-dimensional information by forming a disparity map of three dimensional information for specified coordinates of matching pixels.

2. A method as in claim 1, wherein said using comprises forming a disparity map indicating an estimate of the three dimensional surface, and information about likelihood of said estimate.

3. A method as in claim 1, further comprising initially manually establishing matching parts, and wherein said using comprises automatically using said rectified images to form said three-dimensional information.

4. A method as in claim 3 wherein said manually obtaining comprises identifying identifiable parts in the image.

5. A method as in claim 1 wherein said superimposing comprises defining said images in terms of epipolar geometry, and aligning said images in said epipolar geometry.

6. A method as in claim 2, wherein said rectification transformation in said epipolar geometry is one which aligns specified reference lines in the image.

7. A method as in claim 6, wherein said reference lines include lines passing through manually-obtained image parts.

8. A method as in claim 7, wherein said transformation aligns said specified reference lines by finding an average of end points of two different reference lines, and forming a line through an averaged part.

9. A method as in claim 1,wherein said using comprises forming a disparity surface indicative of three-dimensional information of the image.

10. A method as in claim 9, wherein said disparity surface includes information indicative of a difference between coordinates of matching pixels.

11. A method as in claim 9, further comprising forming a variable denoting a degree of similarity between pixels.

12. A method as in claim 1, wherein said using comprises forming a three-dimensional surface indicative of three-dimensional information contained in said two images, and forming a variable which indicates a likelihood of error in said three-dimensional surface.

13. A method as in claim 12, wherein said forming a variable comprises forming a plurality of seed voxels, and tracing a surface of said plurality of seed voxels.

14. A method as in claim 13, wherein said tracing is carried out for a plurality of said voxels in a multiresolution fashion, such that certain voxels are computed at a coarsest level, and other voxels are computed at a more detailed level.

15. A method as in claim 13, wherein said tracing comprises calculating an entire volume at the coarsest level, and calculating some amount less than the entire volume at a subsequent level.

16. A method as in claim 13, further comprising selecting a seed voxel by finding uniqueness.

17. A method as in claim 13, further comprising selecting the seed voxel using a winner take all technique which has a maximum correlation value.

18. A method as in claim 17, further comprising identifying seed voxels which represent incorrect matches, and removing said seeds after said tracing.

19. A method as in claim 12,wherein said using comprises converting said volume to a plurality of Euclidean points.

20. A method as in claim 19, wherein said converting comprises projecting a reconstruction of said volume, and then reconstructing Euclidean points from said projective reconstruction.

21. A method as in claim 19, wherein said converting comprises transforming an origin of a coordinate system to an origin of one of said images.

22. A method as in claim 20, wherein said reconstructing comprises allowing a user to input a parameter, and adjust the parameter to approximate a proper Euclidean reconstruction.

23. A method as in claim 22 wherein said parameter is focal length.

24. A method as in claim 13, further comprising dividing said surface into a plurality of parts, and said seed voxels are respectively for said plurality of parts.

25. A method, comprising:

obtaining first and second images of the same object;

identifying objects in said first and second images, and forming lines which intersect said objects; and

aligning said lines in an epipolar geometry representation.

26. A method as in claim 25, further comprising using said first and second images, with said aligned lines, to form three-dimensional information.

27. A method as in claim 26, wherein said three-dimensional information is formed as a surface map, indicating

likely three-dimensional information for each of said two-dimensional pixels.

28. A method as in claim 27, further comprising storing a probability measure for said three-dimensional information measure.

29. A method as in claim 26 further comprising identifying at least one seed voxel, with a relatively high probability of being a correct three-dimensional measure.

30. A method as in claim 29, further comprising forming at least a part of said surface map by propagating from said seed voxel.

31. A method as in claim 29, wherein said identifying at least one seed Voxel comprises selecting a seed Voxel that has three-dimensional information for corresponding pixel information u,v that is unique and has a probability of being correct which is greater than a specified threshold.

32. A method as in claim 29, further comprising identifying a plurality of seed Voxel's for each of a plurality of different parts of the three-dimensional surface information.

33. A method as in claim 31, wherein said specified threshold is greater than 0.99.

34. A method as in claim 32, further comprising determining intersections between Voxels at said different parts, and determining which of two Voxels to use at said intersections.

35. A method as in claim 34, wherein said determining which Voxels to use comprises determining a probability of each of the two Voxels, and selecting the higher probability as the Voxel to use.

36. A method as in claim 32, wherein said propagating comprises finding neighbors for Voxels, one by one.

37. A method as in claim 29, wherein said identifying at least one seed Voxel comprises selecting a seed voxel that has three-dimensional information for corresponding pixel information that the best matches the corresponding pixel information, and has a probability of being correct which is greater than a specified threshold.

38. A method as in claim 37, further comprising identifying voxels which represent incorrect matches, and removing said voxels which represent incorrect matches.

39. A method as in claim 26, wherein said three-dimensional information includes a disparity map, and further comprising converting said disparity map into three-dimensional Euclidean points.

40. A method as in claim 27, further comprising converting said surface map into three-dimensional information.

41. A method, comprising:

obtaining information about an image from two uncalibrated cameras; and

using said information from said two uncalibrated cameras to obtain three-dimensional information.

42. A method as in claim 41, wherein said using comprises rectifying said image is to form coplanar images with scan lines that are horizontally parallel.

43. A method as in claim 42, wherein said rectifying comprises identifying points in each of the images, and identifying scan lines which pass through said points.

44. A method as in claim 42, further comprising finding an average of said scan lines between one end of a first image and another end of a second image, and reforming said scan lines between said one end and another end to form said horizontally parallel scan lines.

45. A method as in claim 44, further comprising using said information to form a disparity surface which represents three-dimensional information corresponding to each of said two-dimensional points.

46. A method as in claim 42, further comprising using information from said rectified images to form third dimension information associated with each of said two-dimensional points of said image.

47. A method as in claim 46, wherein said third dimensional information includes a probability that the third dimensional information is correct.

48. A method as in claim 46, further comprising dividing the image into a plurality of patches, and finding said third dimensional information for each of said plurality of patches.

49. A method as in claim 48, further comprising determining third dimensional information for pixels on edges of said patches.

50. A method, comprising:

obtaining two images of similar image information from sources;

superimposing lines formed on said to images to rectify the two images relative to one another to form rectified images; and

using said rectified images to form three-dimensional information.

51. A method as in claim 50, wherein said superimposing comprises:

identifying specified points in the images which pass through specified identifiable parts in each of the images;

forming lines through said specified points; and

aligning said lines between the different images by aligning beginnings and ends of said lines.

52. A method as in claim 51, wherein said lines are aligned by using an epipolar transformation.

53. A method as in claim 52, wherein said epipolar transformation is carried using information in the fundamental matrix.

54. A method as in claim 50, wherein said two images are recovered from two uncalibrated cameras.

55. A method, comprising:

obtaining two images of similar image content;

forming a disparity map of three dimensional information for specified coordinates of matching pixels by forming a plurality of areas, finding seed voxels in each of said plurality of areas which have relatively high probability of being correct matches and propagating to other pixels from said seed voxels.

56. A method as in claim 55, wherein said propagating comprises forming a surface in a volume as said disparity surface.

57. A method as in claim 55, wherein said finding seed voxels comprises reviewing each said section, and finding a voxel with a peak correlation value in each said section as said seed voxel.

58. A method as in claim 55, wherein said finding seed voxels comprises reviewing each said section, and finding a first found voxel with a correlation value greater than a specified threshold in each said section as said seed voxel.

59. A method as in claim 55, further comprising calculating first information at a first resolution for said seed voxels, and calculating second information, at a second resolution less than said first resolution, for other voxels other than said seed voxels.

60. A method, comprising:

obtaining two images of similar image content;

forming a disparity map of three dimensional information for specified coordinates of matching pixels by forming a plurality of areas, finding first information in each of said plurality of areas which have relatively high probability of being correct matches and obtaining said first information at a first resolution, and propagating along a surface to obtain

second information at a second resolution less than said first resolution.

61. A method as in claim 60, wherein said two images are from two separate image sources.

62. A method as in claim 60, wherein said first information is seed information.

63. A method as in claim 60, wherein said seed information is obtained by a winner-take-all test, where, at each pixel (u,v), all voxels (u,v,d) where dÎ[-W0/2, W0/2] are computed, and a voxel with a maximum correlation value is used.